

(C) AMENDMENTS TO THE CLAIMS:

I - 13 (canceled)

14. (new) A position and orientation sensor, comprising:

an alignment target having a first optical feature a fixed distance from a second optical feature;

an imaging device that can form an optical image of said alignment target with said first feature in-focus at a distinct location and size in said image and said second feature out-of-focus at a distinct location and size in said image;

whereby said location and size of said first feature in said optical image and said location and size of said second feature in said optical image are measurements of up to three orthogonal positions and up to three orthogonal orientations of said alignment target with respect to said imaging device.

15. (new) The sensor of claim 14 wherein one or more of said features is a cross hair.

16. (new) The sensor of claim 14 wherein said imaging device comprises a lens and a transparent projection screen.

17. (new) The sensor of claim 14 wherein said imaging device is a camera.

18. (new) The sensor of claim 14 further including a monitor connected to said imaging device.

19. (new) The sensor of claim 14 further including a computer connected to said imaging device.